

Dr. Kevin J. O'Shea
Amoco Petroleum Products - Whiting
2815 Indianapolis Boulevard
Whiting, Indiana 46394

Re: 089-10795-00003
Modification to CP-089-5175-00003

Dear Dr. O'Shea:

Amoco Petroleum Products was issued a Construction Permit on July 15, 1996, for a Biovent Soil Remediation System located at the Whiting, Indiana, source. On April 26, 1999, Amoco Petroleum Products submitted a letter requesting revision of the operating conditions for the Biovent System to remove the requirement that the control achieve a minimum VOC destruction efficiency of 99% so that operation of the system could continue without violating the terms of the permit. Based on the letter and information submitted, the Office of Air Management (OAM) has determined that the following changes shall be made to the operation conditions of the permit (bold emphasis added to new language):

1. Operation Condition No. 3 on Page 3 of 5 of the permit shall be revised as follows to replace the minimum destruction efficiency requirement with a short term VOC emission rate limitation:

3. That

~~(a)~~ — the catalytic thermal oxidizer shall operate at all times the gas blower of the biovent system is operating. When operating, the catalytic thermal oxidizer shall maintain a minimum operating temperature at one end of the catalyst bed, and the temperature differential across the catalyst bed ~~to be determined in the compliance tests (described in Operation Condition 5) to maintain at least 99% destruction of volatile organic compounds~~ **to be indicative of normal operation. The volatile organic compound (VOC) emissions from the biovent system shall not exceed 0.62 pounds per hour;**

The source can comply with this condition by keeping records of the malfunction report of the catalytic thermal oxidizer; and other malfunction reports of the biovent system, when the catalytic thermal oxidizer is operating but the remediation process is not venting to the catalytic thermal oxidizer; and thermal oxidizer may be shut off. Before shutting off the catalytic thermal oxidizer, Amoco shall inform the OAM in advance.

These conditions shall make the requirements of Emission Offset for severe nonattainment for ozone, 326 IAC 2-3 and 40 CFR 51.18(j) not applicable to this modification, because the uncontrolled emissions of VOC are more than the de minimis level. This will also satisfy the requirements of 326 IAC 8-1-6.

2. Operation Condition No. 5 on Page 4 of 5 of the permit shall be revised as follows to make the stack testing language consistent with the changes to Operation Condition No. 3 (above):
 5. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed to verify the volatile organic compounds control efficiency of, **and emission rate from**, the catalytic thermal oxidizer to document compliance with condition no.3; and to determine a minimum operating temperature at one end of the catalyst bed, and the temperature differential ~~to maintain at least 99% destruction of volatile organic compounds (VOC)~~ **indicative of normal operation** within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up of each phase. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner. The Office of Air Management (OAM) shall be notified of the actual test date at least two (2) weeks prior to the date, a test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test, and all test reports must be received by the OAM within 45 days of completion of the testing, pursuant to that rule.

All other conditions of the permit (CP-089-5157-00003) shall remain unchanged and in effect. Please attach a copy of this modification to the front of the original construction permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Janusz Johnson, OAM at the above address; or by phone at 317-232-8325 or 1-800-451-6027 (dial "0" and ask for ext. 2-8325).

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

JKJ

cc: File - Lake County
Northwest Regional Office (NWRO)
Air Compliance Section Inspector - Ramesh Tejuja
Compliance Data Section - Mindy Jones
Administrative and Development - Janet Mobley
Technical Support and Modeling - Nancy Landau

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for Permit Modification

Source Background and Description

| | |
|------------------|--|
| Source Name: | Amoco Petroleum Products |
| Source Location: | 2815 Indianapolis Boulevard, Whiting, Indiana, 46394 |
| County: | Lake |
| CP No.: | 089-10795-00003 |
| SIC Code: | 2911 |
| Permit Reviewer: | Janusz Johnson |

On July 15, 1996, the Office of Air Management (OAM) issued a permit to Amoco Petroleum Products for a Biovent Soil Remediation System (CP No. 089-5157-00003). The Biovent System is designed to remove hydrocarbons from the ground around a crude oil storage area. Volatile organic compound (VOC) emissions from the system are controlled by a catalytic thermal oxidizer. On April 26, 1999, the OAM received a letter from Amoco Petroleum Products requesting a revision of the operating conditions of the Biovent System permit to remove the requirement that the control achieve a minimum VOC destruction efficiency of 99%. Based on the VOC loading anticipated at the beginning of the remediation project, the catalytic thermal oxidizer was designed to obtain an overall destruction efficiency greater than 99%; however, as the system removed hydrocarbons from the soil the VOC concentrations in the air exhausted to the catalytic thermal oxidizer have decreased. This reduced VOC loading has decreased the effectiveness of the catalytic thermal oxidizer and the control device can no longer obtain a destruction efficiency of 99%. As a result, the Biovent System has been shut down.

This modification will revise the operation conditions for the Biovent System by replacing the control efficiency requirement with a short term VOC emission rate limitation so that the Biovent System can continue to operate until the contaminated area is completely remediated. This new limitation will satisfy the original intent of requiring the minimum control efficiency, which was to limit the potential to emit (PTE) of volatile organic compounds to a level less than 15 pounds per day. Compliance with this new short term limit has already been demonstrated by stack tests performed on the Biovent System.

Stack Summary

There are no new emission points associated with these changes.

Recommendation

The staff recommends to the Commissioner that this permit modification be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the original permit application and additional information submitted by the applicant.

A letter requesting this review was received on April 26, 1999.

Potential to Emit (PTE)

There is no change to the Potential and Allowable Emissions associated with the original project. However, the limited level of VOC emissions from the Biovent System will increase from 6.63 pounds per day to 14.9 pounds per day as a result of removing the minimum control efficiency and replacing it with a hourly emission rate limit of 0.62 pounds of VOC per hour. The increase in limited PTE is not considered significant and does not change any of the determinations made in the original permit review.

Proposed Modification

PTE of the Biovent System (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable) has changed as a result of the proposed permit modification. The following is a revised Prevention of Significant Deterioration and Emission Offset analysis for the project:

| Pollutant | PM (ton/yr) | PM10 (ton/yr) | VOC (lb/day) | CO (ton/yr) | NOx (lb/day) |
|--|----------------|------------------|-----------------|----------------|-----------------|
| Proposed Modification | 0.02 | 0.02 | 14.9 | 0.035 | 0.912 |
| Severe Nonattainment Threshold Level | | | 15 | | 25 |
| PSD or Offset Significant Level | 25 | 15 | | 100 | |

This modification to an existing major source is not major for VOC, and NOx, because the emissions increases are less than the threshold levels for VOC and NOx emissions for severe nonattainment for ozone. Therefore, pursuant to 326 IAC 2-3, and 40 CFR 51.18(j), the Emission Offset requirements for severe nonattainment for ozone, do not apply for VOC, and NOx emissions.

This modification to an existing major source is not major for PM, and PM10, because the emissions increases are less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, and 40 CFR 51.18(j), the Emission Offset requirements do not apply for PM, and PM10 emissions.

This modification to an existing major source is not major for CO because the CO emissions increase is less than the PSD significant level. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 Operating Permit application (T-089-6741-00003) on September 30, 1996. The changes being reviewed under this permit modification will be incorporated into the submitted Part 70 application.

Federal Rule Applicability

There is no change to the applicability of Federal requirements as a result of this permit modification.

State Rule Applicability

There is no change to the applicability of any State rules as a result of this permit modification.

Since the Biovent System is not regulated by other provisions of 326 IAC 8, volatile organic compounds (VOC), emissions from the remediation process are subject to 326 IAC 8-1-6 (Volatile Organic Compound Rules- New Facilities; General Reduction Requirements). These emissions must be controlled using the Best Available Control Technology (BACT), pursuant to that rule. The Office of Air Management has determined the catalytic thermal oxidizer is still the best available control technology for this process.

Air Toxic Emissions

The Biovent System will still emit the levels of hazardous air pollutants less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

Conclusion

The modification of the Biovent Soil Remediation System permit (CP No. 089-5157-00003) will be subject to the conditions of the attached proposed **Permit Modification No. CP-089-10795-00003**.